The JONES COLORIZER

is first mix
trols for this mixe
gain, 4) Blue gain, 5)
6) Channel pedestal.
pot on the control
a switch and jac
This firs
set to key
pulse gen
provide
the t

		clip		
A	pin 1	pedestal	1	red }
B	pin 2		2	green }
C	pin 3		3	red }
D	4		4	blue }
E	5	video gain	1	black }
F	6		2	white }
G	7		3	red }
H	8		4	yellow }
J	9	pedestal	1	green }
K	10		2	blue }
L	11		3	black }
M	12		4	red }
N	13	chroma	1	black }
P	14		2	orange }
R	15		3	red }
S	16		4	white }
T	17	R	1	red }
U	18		2	brown }
V	19		3	green }
W	20		4	white }
X	21	G	1	black }
Y	22		2	green }
Z	23		3	red }
a	24		4	orange }
b	25	B	1	black }
c	26		2	blue }
d	27		3	black }
e	28		4	yellow }
f	29	video gain out		black }

SHTS HZ

R	15		3	red
S	16		4	white
T	17	R	1	red
U	18		2	brown
V	19		3	green
W	20		4	white
X	21	G	1	black
Y	22		2	green
Z	23		3	red
a	24		4	orange
b	25	B	1	black
c	26		2	blue
d	27		3	black
e	28		4	yellow
f	29	video gain out		black
g	30	pedestal out		brown
h	31			orange
j	32			
k	33			
l	34	+10V		violet/red
m	35	⏚		yellow/green

1	pin A	clip out	1	black
2	B		2	gray
3	C		3	pink
4	D		4	light brown
5	E			orange
6	F	+10 V		violet
7	G			
8	H	⏚		yellow
9	J			dark brown
9	K	clip in	1	blue
10	L		2	red
11	M		3	green
12	N		4	white

(Vb)

(Ab)

Compos.

Bl.

BF

3.58.

3,579,545 Hz
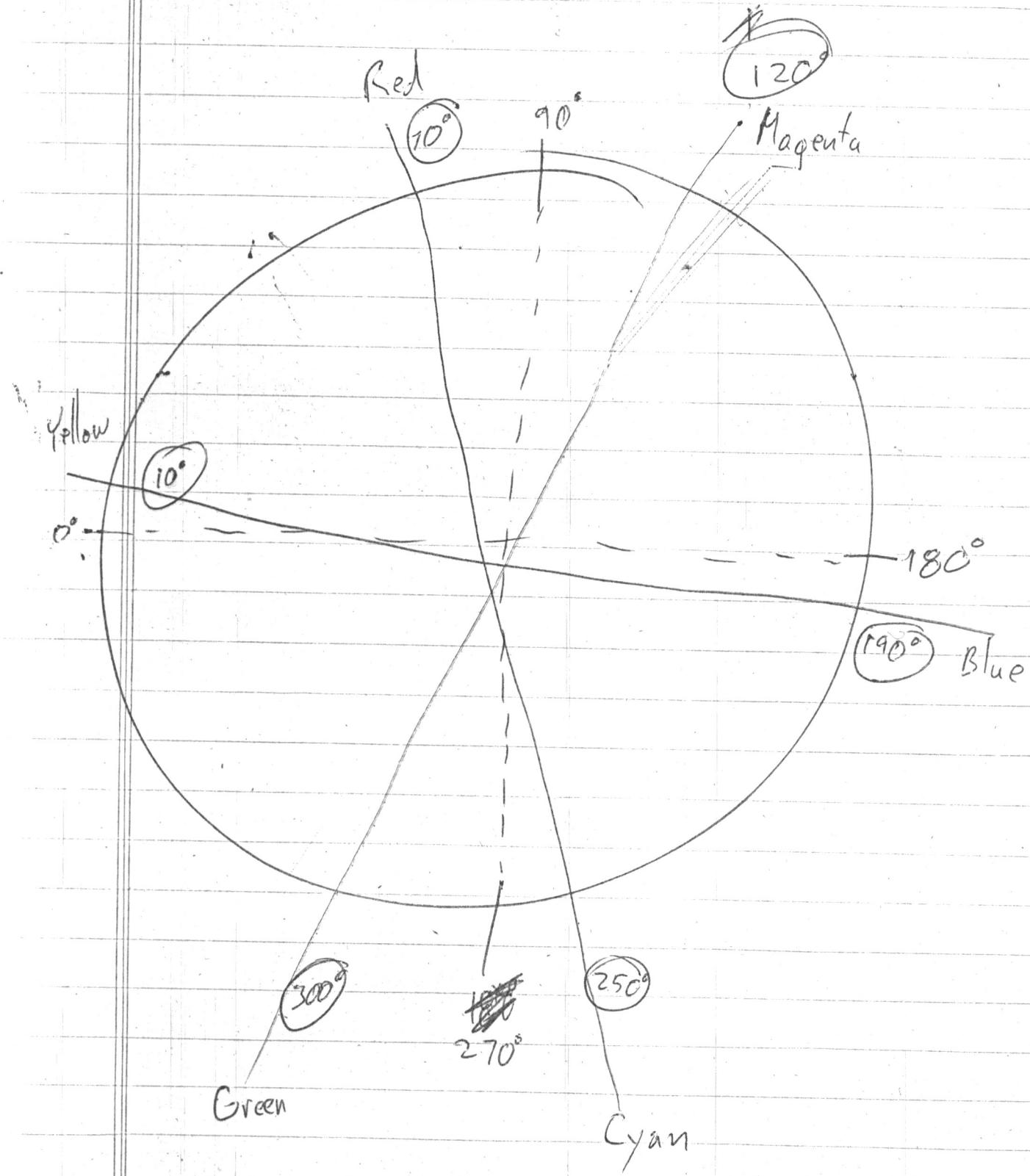
January 8, '75

Pin	INPUT 1	INPUT 2	INPUT 3	input 4	Mix	Output	Sync Proc
1						⏚	
2	BUSED					Unreg. +15vdc	
3	clip 1 pulse out	clip 2 pulse out	clip 3 pulse out	clip 4 pulse out			
4					Bused		+12
5		Blanking from pin 17 output board					
6	Video 1 IN	Video 2 IN	Video 3 IN	Video 4 IN			3.58 IN
7	clip 1 Voltage	clip 2 Voltage	clip 3 Voltage	clip 4 Voltage		Output A	o To pin 11 output Board (3.58)
8	clip 1 pulse IN	clip 2 pulse IN	clip 3 pulse IN	clip 4 pulse IN		Output B	
9	3.58 Red IN FROM pin 9 sync Board					output B	Red out
10	*1 Red Level Voltage	*2 Red Level Voltage	*3 Red Level Voltage	*4 Red Level Voltage			Blue out
11	3.58 Blue in from pin 10 Sync Board					3.58	Green out
12	⏚	⏚	⏚	⏚	⏚	⏚	⏚
13	*1 Blue level Voltage	*2 Blue level Voltage	*3 Blue level Voltage	*4 Blue level Voltage		B.F.	B.F. IN To pin 13 of (BF) output Board
14	3.58 Green in from pin 11 Sync Board					⏚	
15	*1 Green level Voltage	*2 Green level Voltage	*3 Green level Voltage	*4 Green level Voltage		Sync	Sync IN
16	Pedistal 1 Voltage	Pedistal 2 Voltage	Pedistal 3 Voltage	Pedistal 4 Voltage			To pin 15 of output Board (Sync)
17	Luminance 1 Voltage	Luminance 2 Voltage	Luminance 3 Voltage	Luminance 4 Voltage		Blanking	
18	chroma 1 Voltage	chroma 2 Voltage	Chroma 3 Voltage	chroma 4 Voltage		⏚	Blanking IN to pin 17 at output Board (Blanking)
19	out 1	out 2	out 3	out 4		Video in	
20	⏚	⏚	⏚	⏚		⏚	⏚
21		Bused				Unreg. -15 vdc	UNR -15
22	⏚	⏚	⏚	⏚	⏚	⏚	⏚

Colorizer as of 1/8/75

Pin	INPUT Boards 1~4	Mix Board	Output Board	Sync Proc
1	⏚	⏚	⏚	⏚
2	unreg. +15	unreg. +15	unreg +15	unreg. +15
3	clip pulse out			+5 Buss
4	regulated +12 — From	Mix Sync	board	
5	Blanking From pin 17 of output Board	✕ ⏚		+5 Buss
6	Video IN			3.058 from Panel
7	clip Voltage	Vid out	Output A	To pin 11 output board 3.058
8	clip pulse in	⏚	⊕ Ped.	⏚
9	Red from Sync Board	Vid 1 in	Output B	to pin 9 input Board RED
10	Red level Voltage	⏚	⏚	to pin 11 input Board Blue
11	Blue from Sync Board	Video 2 IN	3.058 from Sync Board	to pin 14 of input Board Green
12	⏚	⏚	⏚	⏚
13	Blue level Voltage	Vid. 3 in	B.F. from Sync Board	B.F. from Panel
14	Green from Sync Board	⏚	⏚	to pin 13 output board B.F.
15	Green level Voltage	Vid 4 in	Sync from Sync Board	composite Sync from Panel
16	Pedistal Voltage	⏚ ✕ Red	⏚	⏚
17	Luminance level Voltage	✕✕✕ Gain	Blanking from Sync Board	to pin 15 output Board Sync.
18	chroma level Voltage	⏚		Blanking from Panel
19	Outputs	✕✕✕ Gain	Video from Mixer	to pin 17 of output board Blanking
20	⏚		⏚	⏚
21	UnREG. −15	unreg. −15	unreg. −15	unreg. −15
22	⏚	⏚		⏚

Encoder

4/13/75
Dave Jones

adj for -.75 ~ 4.8

adj. for 2.2 ~ 4.8

adjust for 1.2 ~ 4.8

3.8
Osc.

sync

90°
Delay
Line

1445

1445

1445

B+

B+

B+

B

G

R

Mixer

C

Comp.
MA760

A

B+

B+

exclusive or
Gate
MC724I

C

Switch
1445

B+

Sync
AOD

Burst
Add

Burst

out
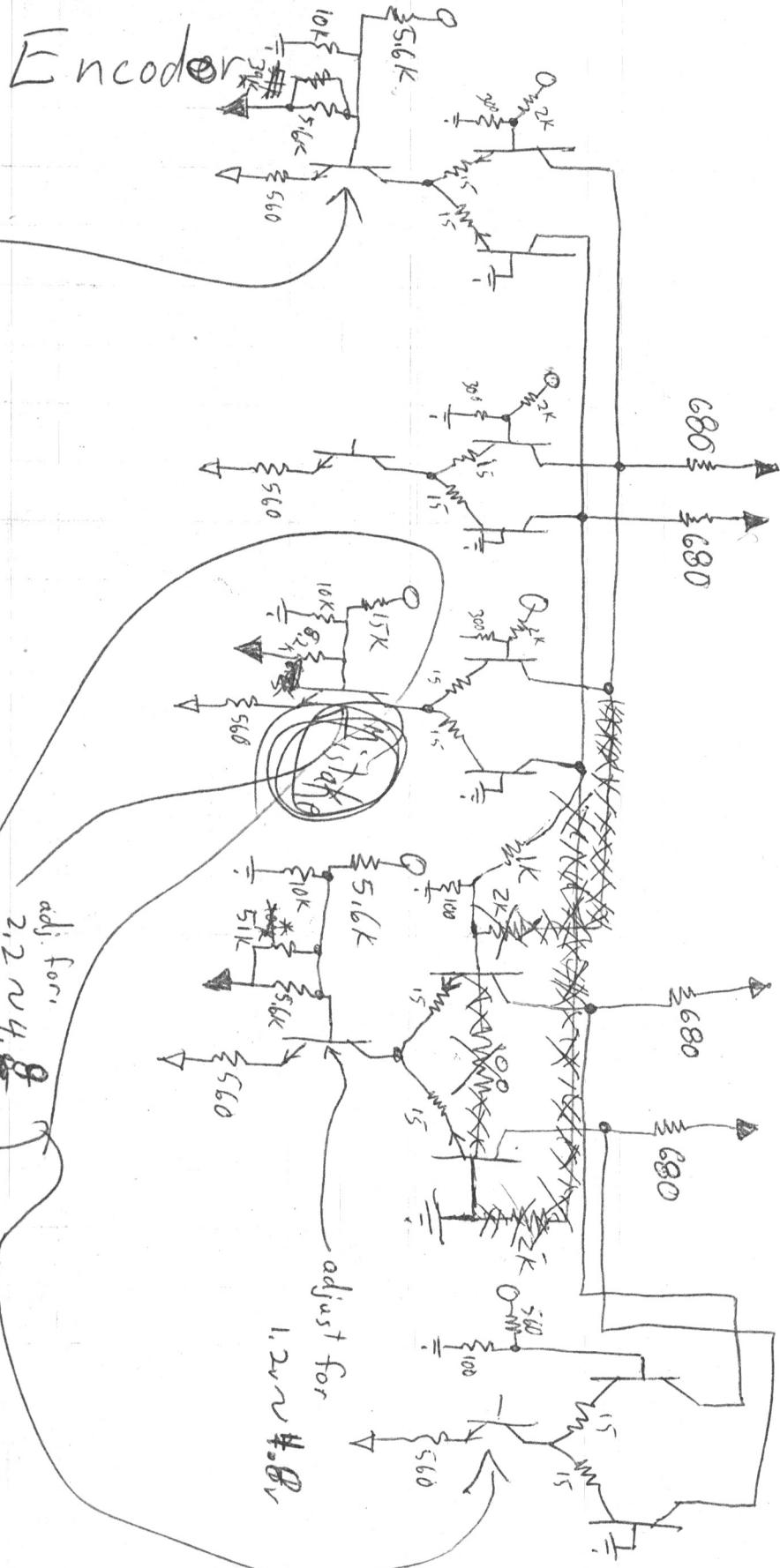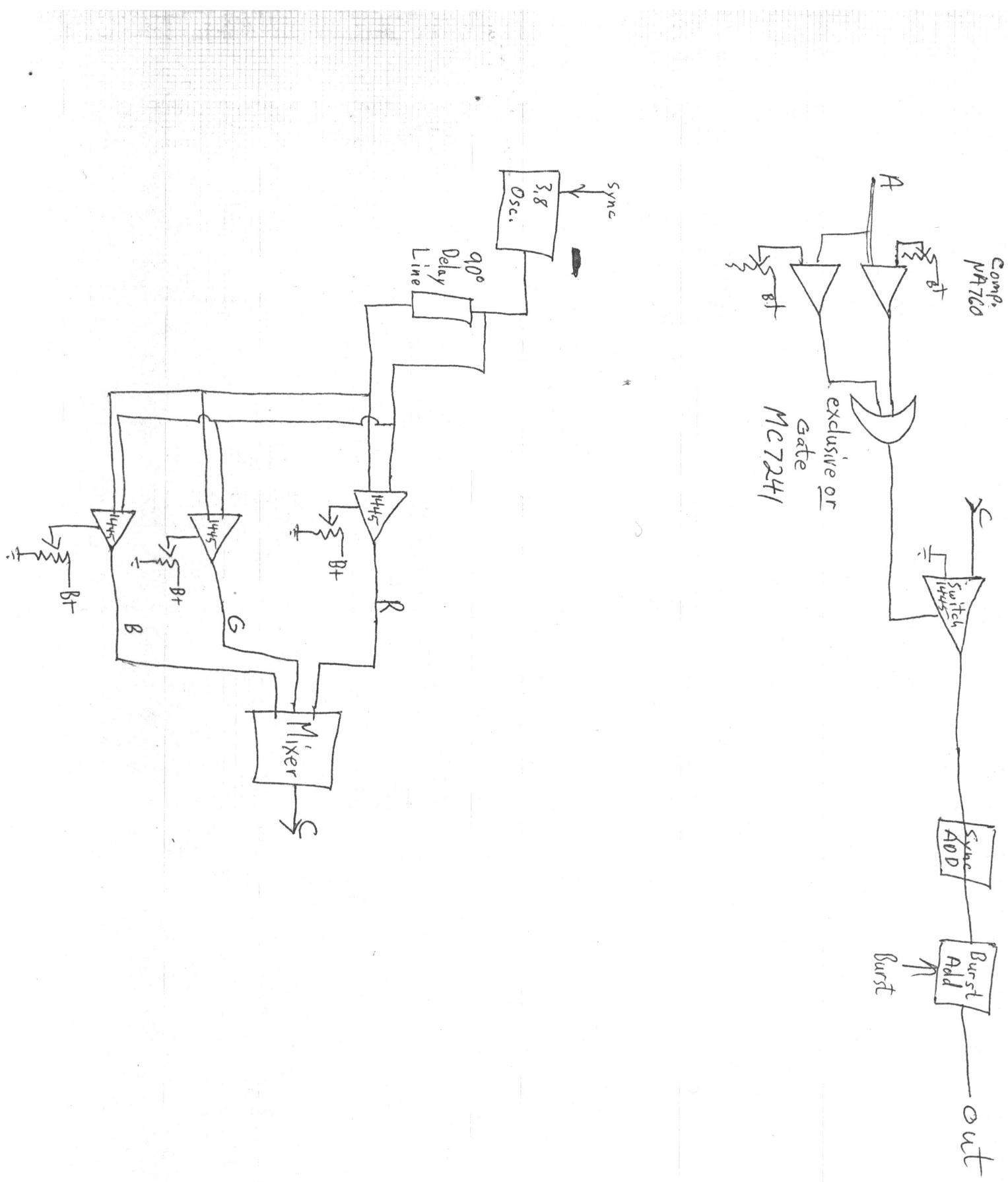
Complete Control Colorizer

Composite Luminance

X ± $1-\infty$

(A) Separate (B) Switch Mix (D) ADD Sync & Burst (E) out

Sync Strip

Sync.

$1-\infty$

Sync + Burst gen   3.58 osc. (C) 3 Phase Shifters   R G B   Mix

to control mixer

Freq. to voltage Conv.

Crossover

Audio

Seperaters

comparitors

Exclusive or Gate

μA 760

μA 760

MC 7241

(A)
(1)
(2)
Bt
(B)

Phase shifters

.58 in

(C)

90° Delay Line

1445

R, G or B

Bt

Sync. insert

(D) 1445 (E)

Sync

μA 760

Bt
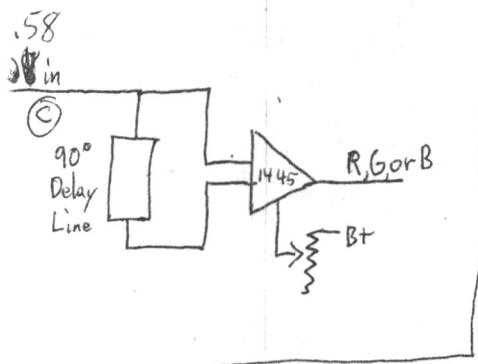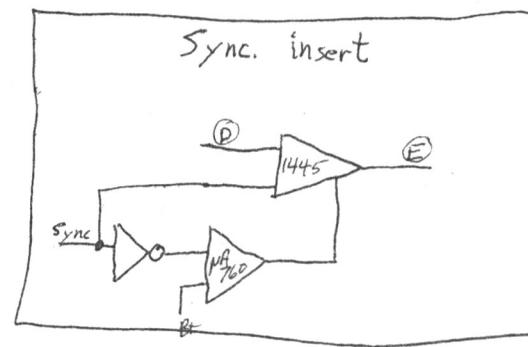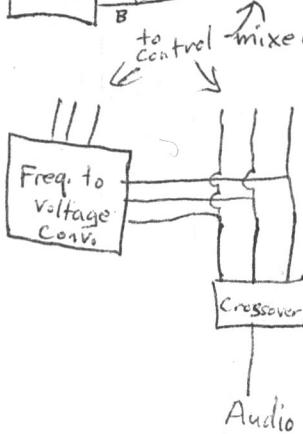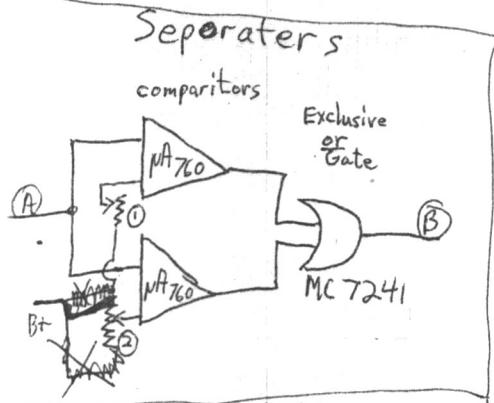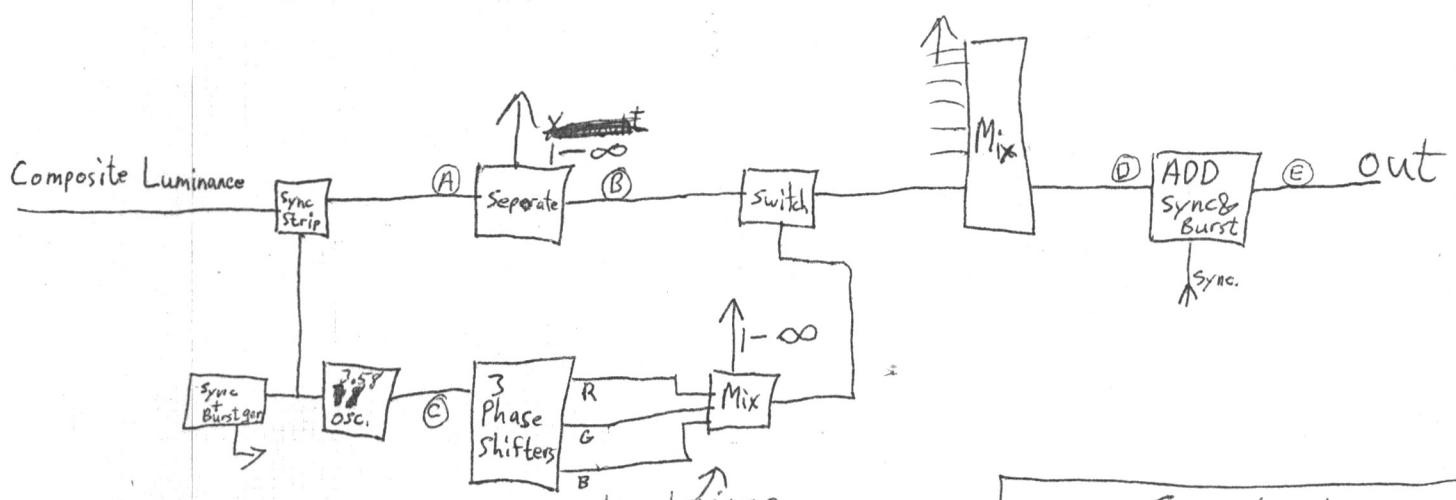
an audio input can control the mixture of colors by frequency change or volume change

Controls (1) and (2) give you complete control over the size and placement of the grey levels

The R,G,B, mixers will give you complete control over the color added to each level

Selective level Keyer
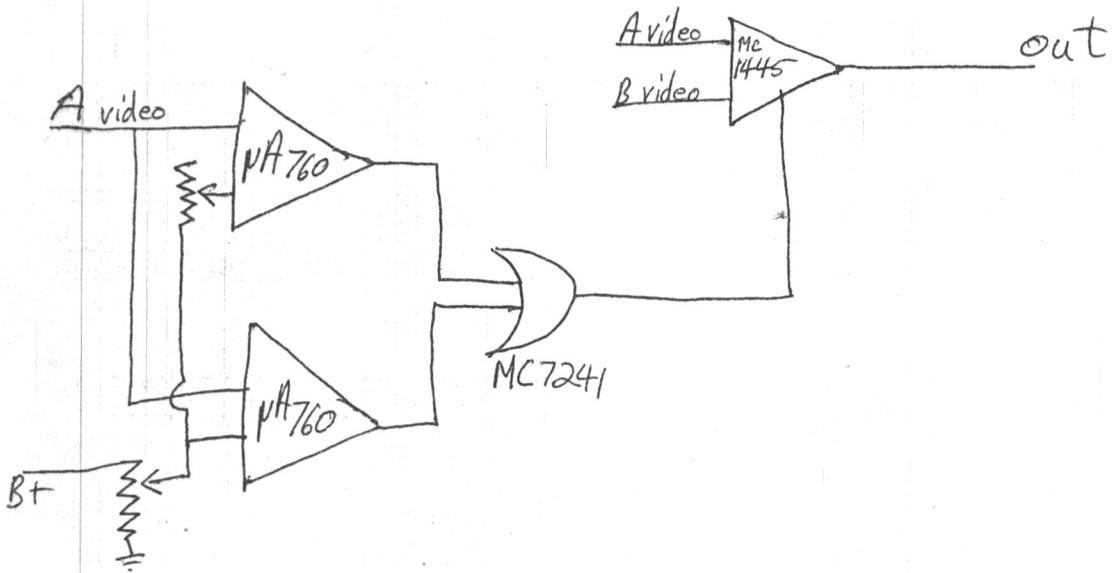
Most Keyers place the second image

Keyers only allow you to Key over a certain level of the video or higher, for example over anything white or anything light gray or brighter or med. gray or brighter

they this Keyer allows you to be selective for example only on 1 shade of gray or everything except Black and white etc.

Comparator Amp.
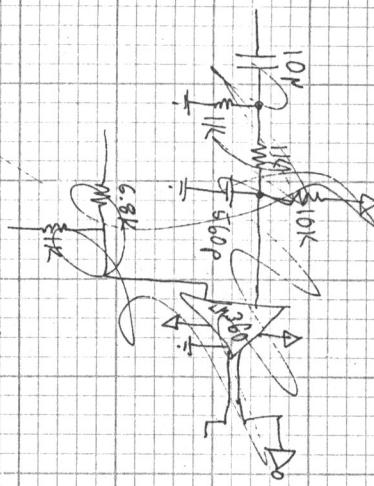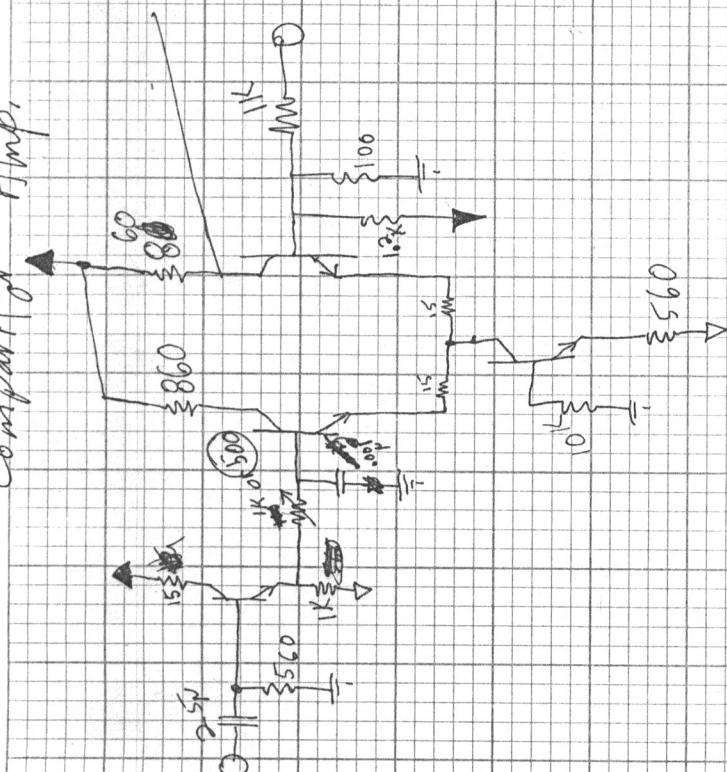
Colonizer #1
Output Board

~~WAIT~~ No good

As of 1/10/75

Pins	
1	⏚
2	UNREG +15
3	⏚
4	1
5	
6	⏚
7	OUT
8	⏚
9	Out
10	⏚
11	3.58
12	⏚
13	BF
14	⏚
15	Sync
16	⏚
17	Blanking
18	⏚
19	Video IN
20	⏚
21	UNREG -15
22	⏚

IC		
1	1410	A1=Sync Level
2	1445	A2=Bst. level
3	0002	A3=Video Level
4	1445	A4 Black level
5	340-K 5.0	
6	320-K 5.2	

B.F. IN

358   30K   .1   Sync   1   51K   1K

Video IN   .8   IC   100   22K

Blanking IN   1   30K   1K   220K   30K   A3   30K   20K

10K   100   IC   15   15   15

IC 5   UNREG +15

IC 6   UNREG -15

IC W   270   1K   390K   A4

* = Adjust for Black if video interferes with sync, Decrease Resistor
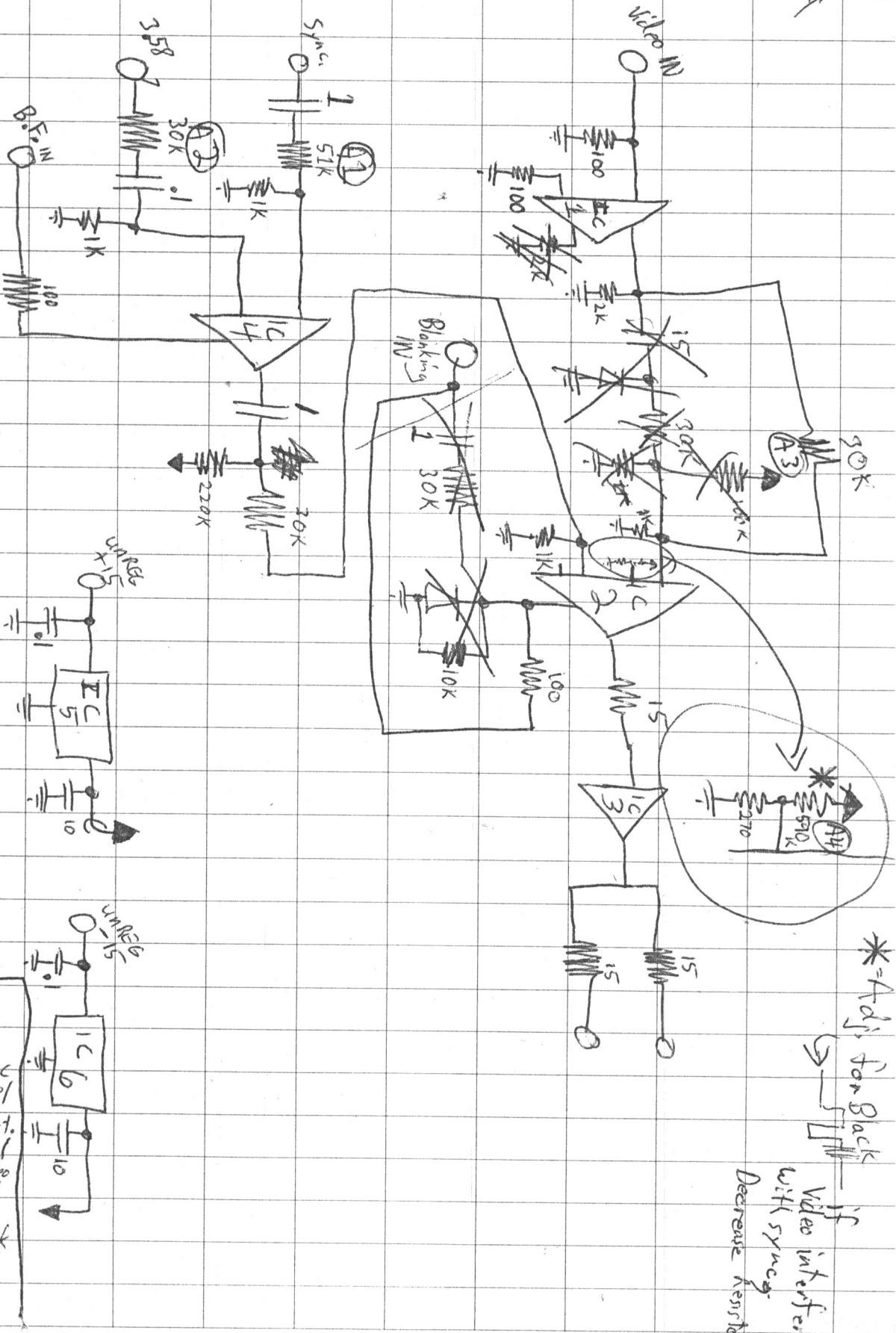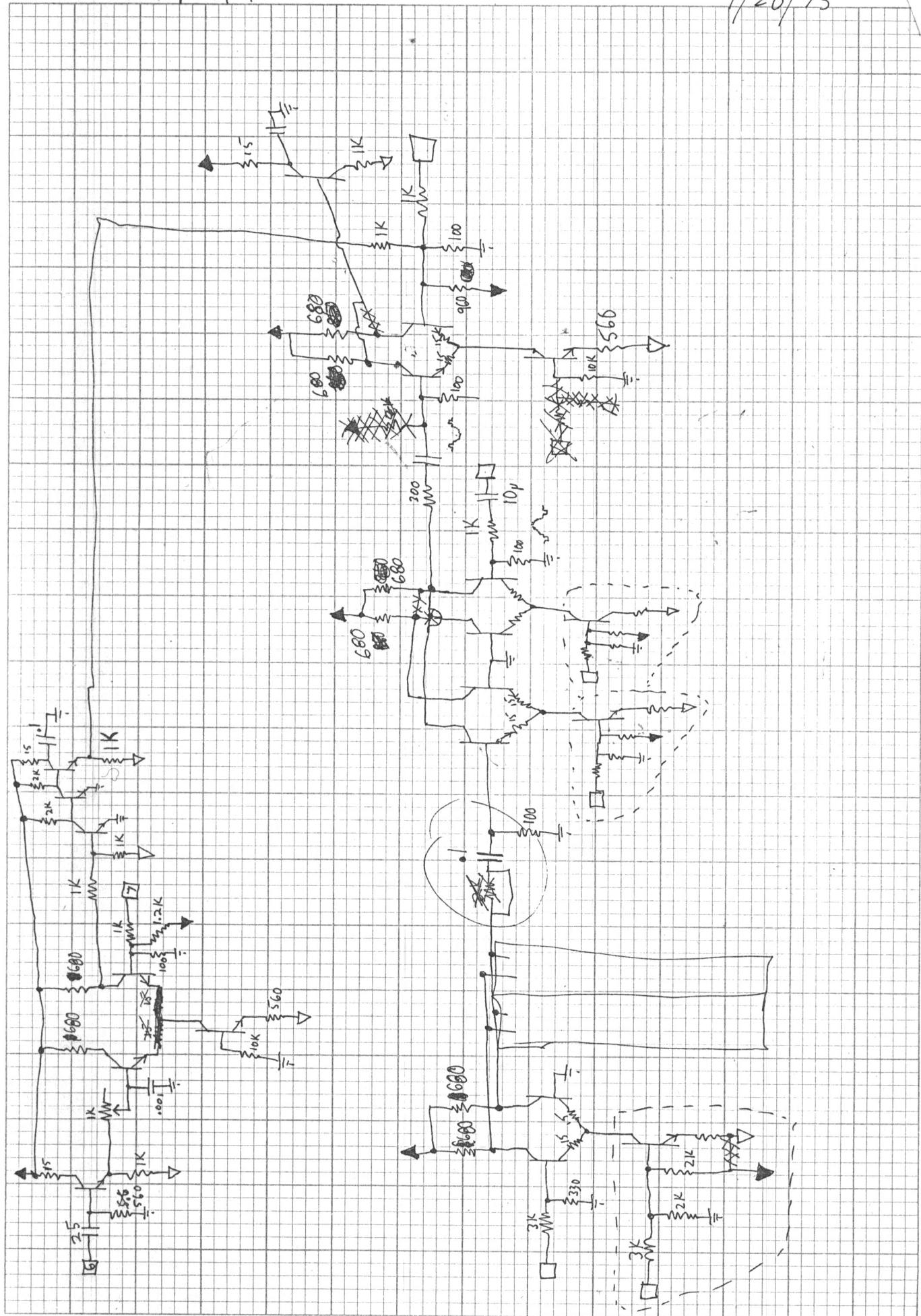
Colorizer #1
output Board Logic
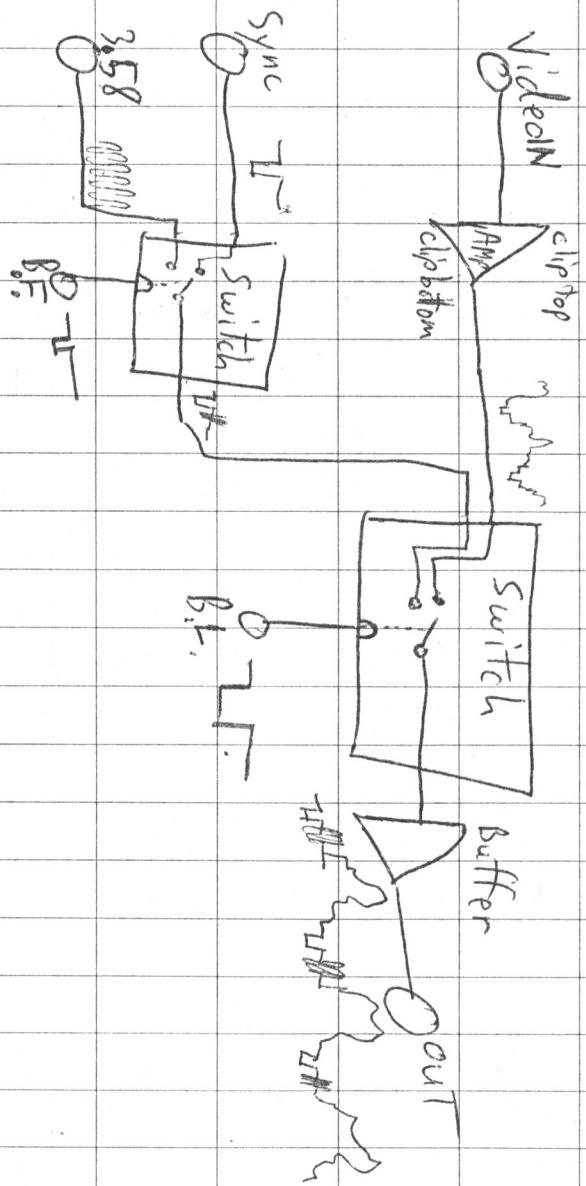
Colorizer #1
Logic
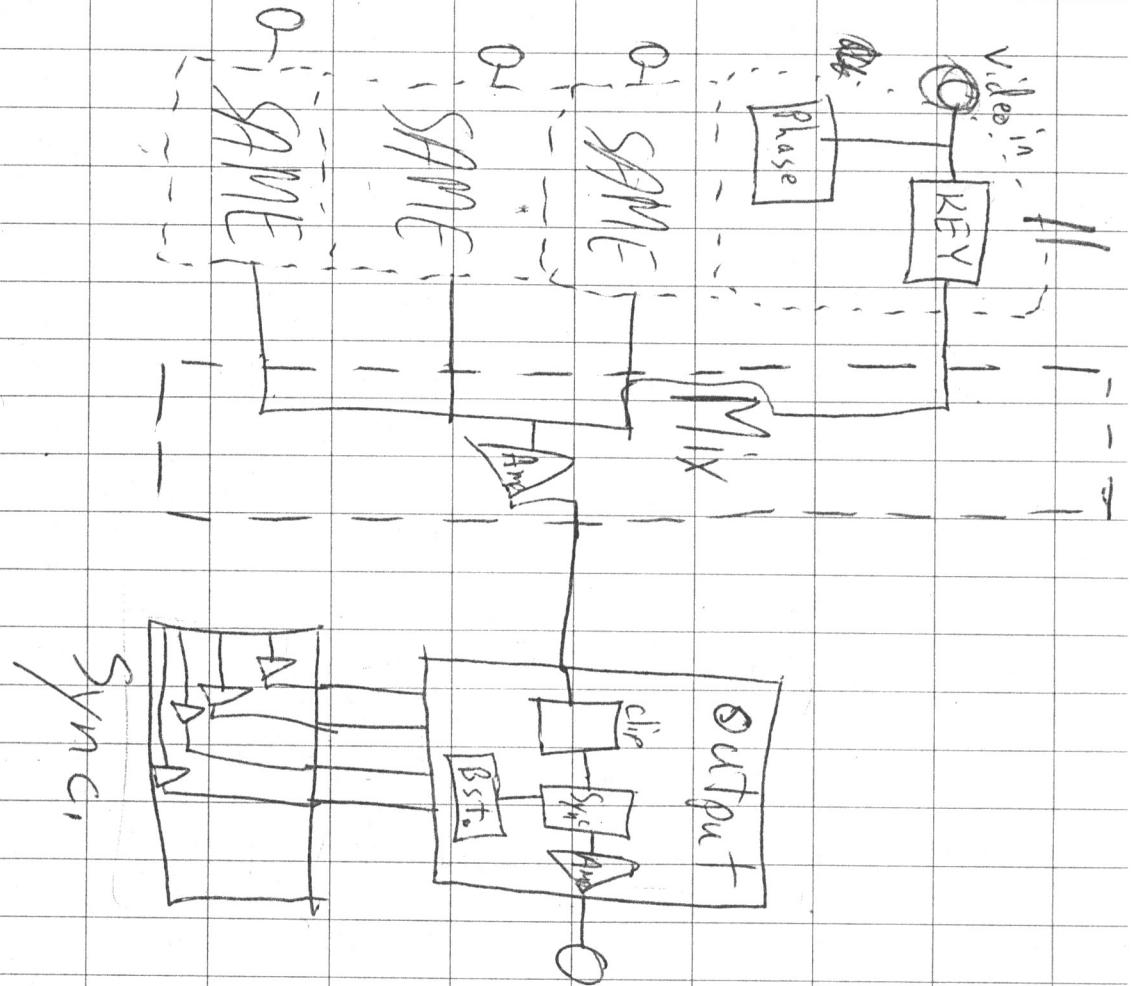
Colorizer #1 1/11/75
Input Board Logic

National 42-383 Made in U.S.A

B in — Vi cont. Amp — level
G in — Vi cont. Amp — level
R in — Vi cont. Amp — level
Video in — Amp
Vi cont. Amp — level
Vi cont. Amp — level
Vi cont. Amp — level
Comp — clip
Switch
E.F.
realist
out
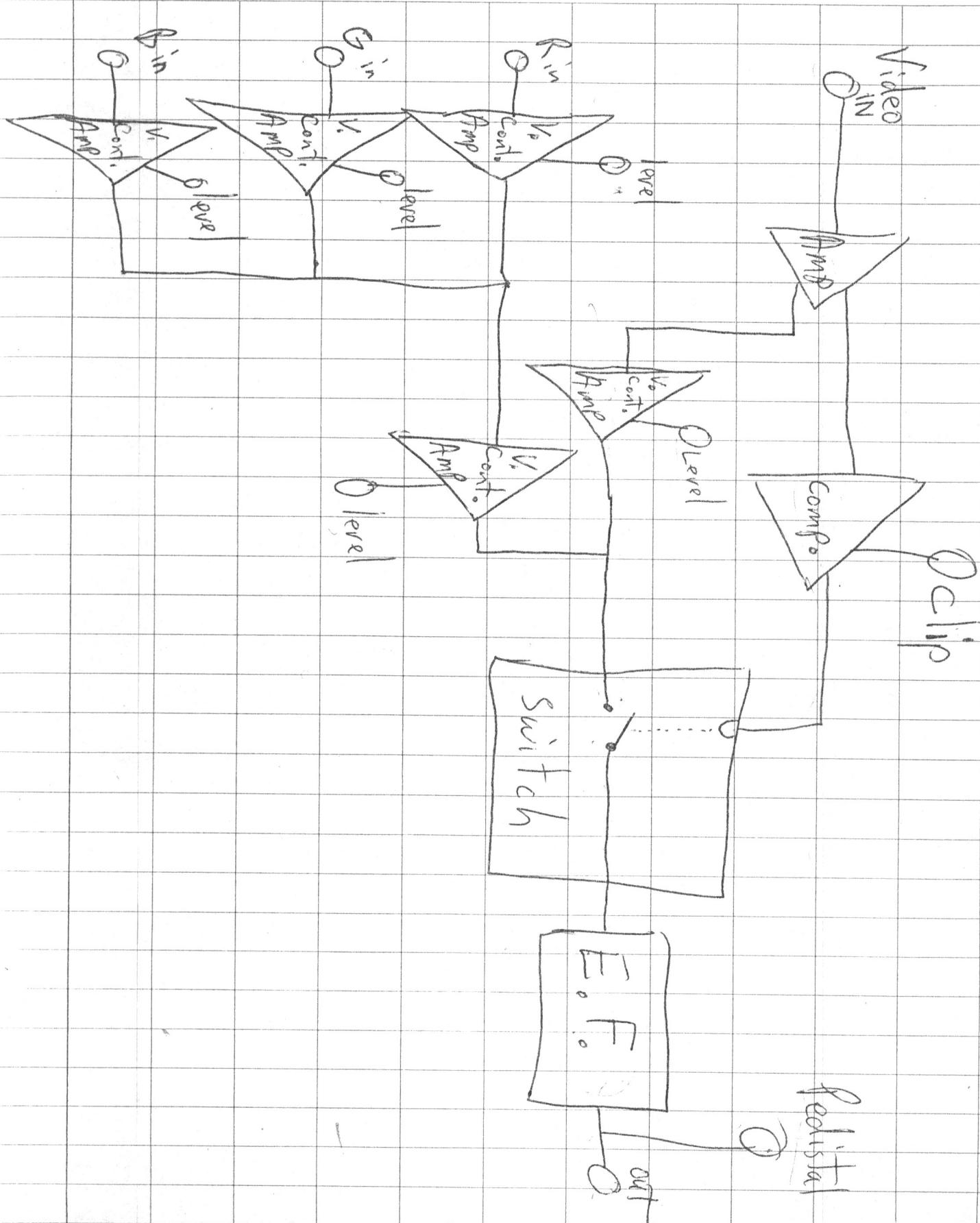
Colorizer #1
Sync. Board Logic

Colorizer #1
Sync. board

NATIONAL
42-383
Made in U S A
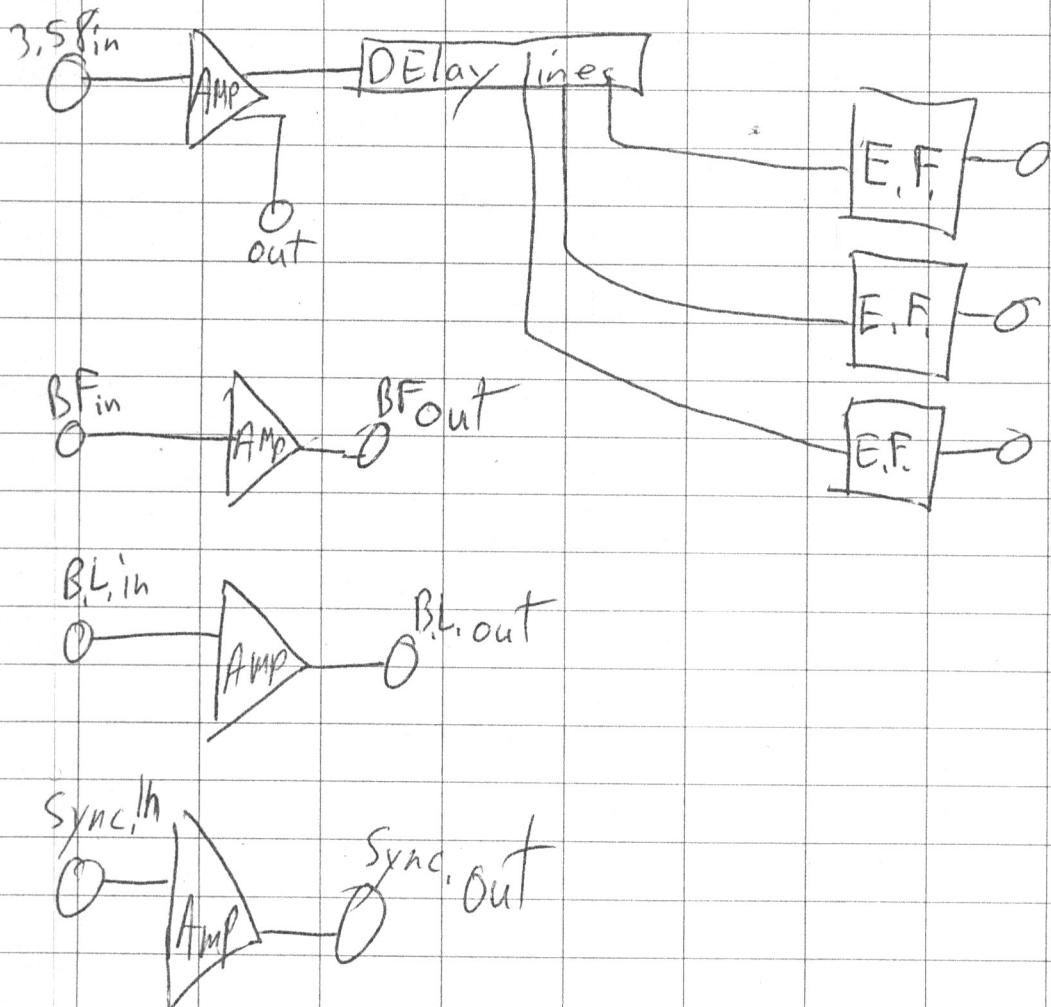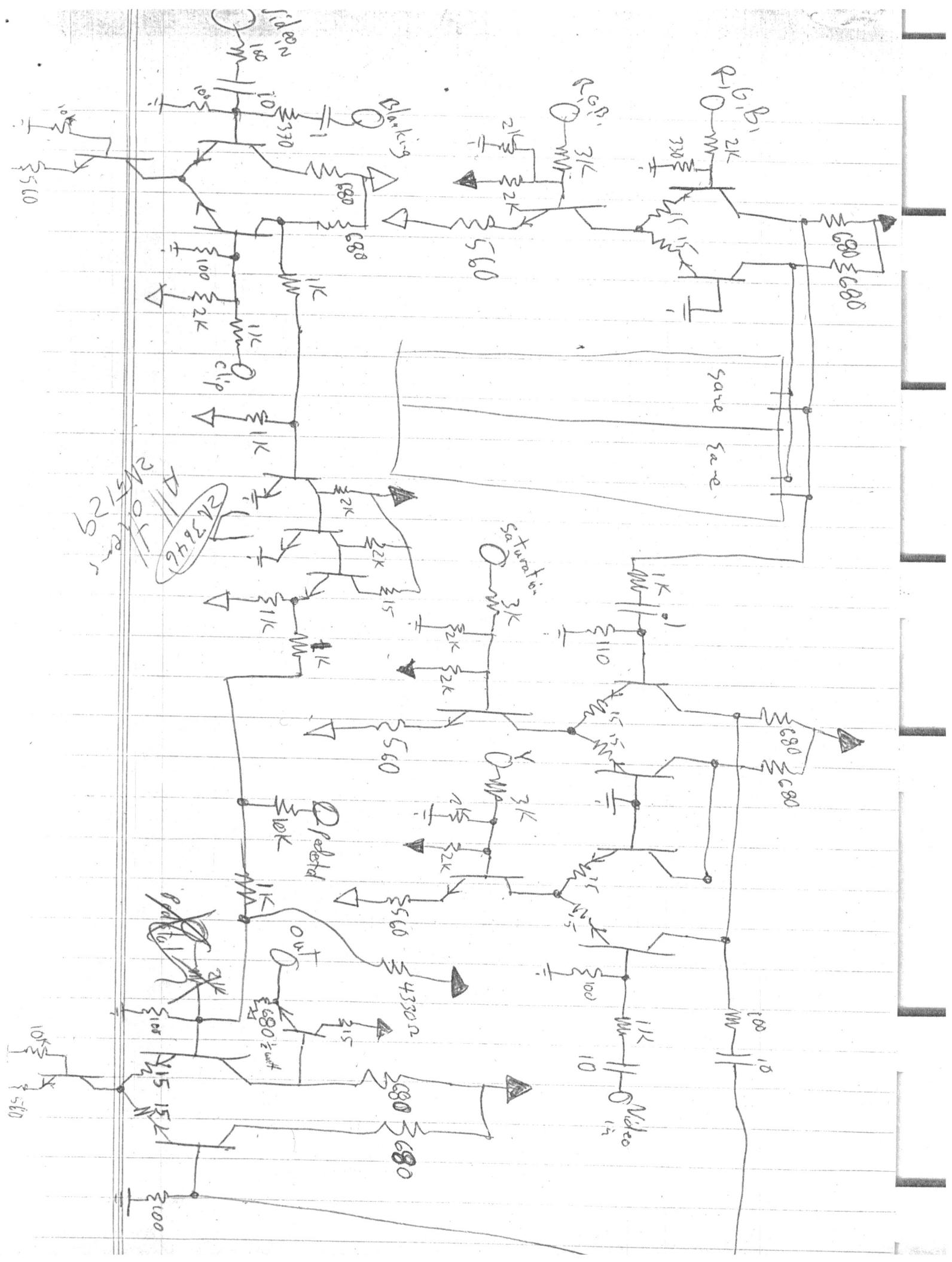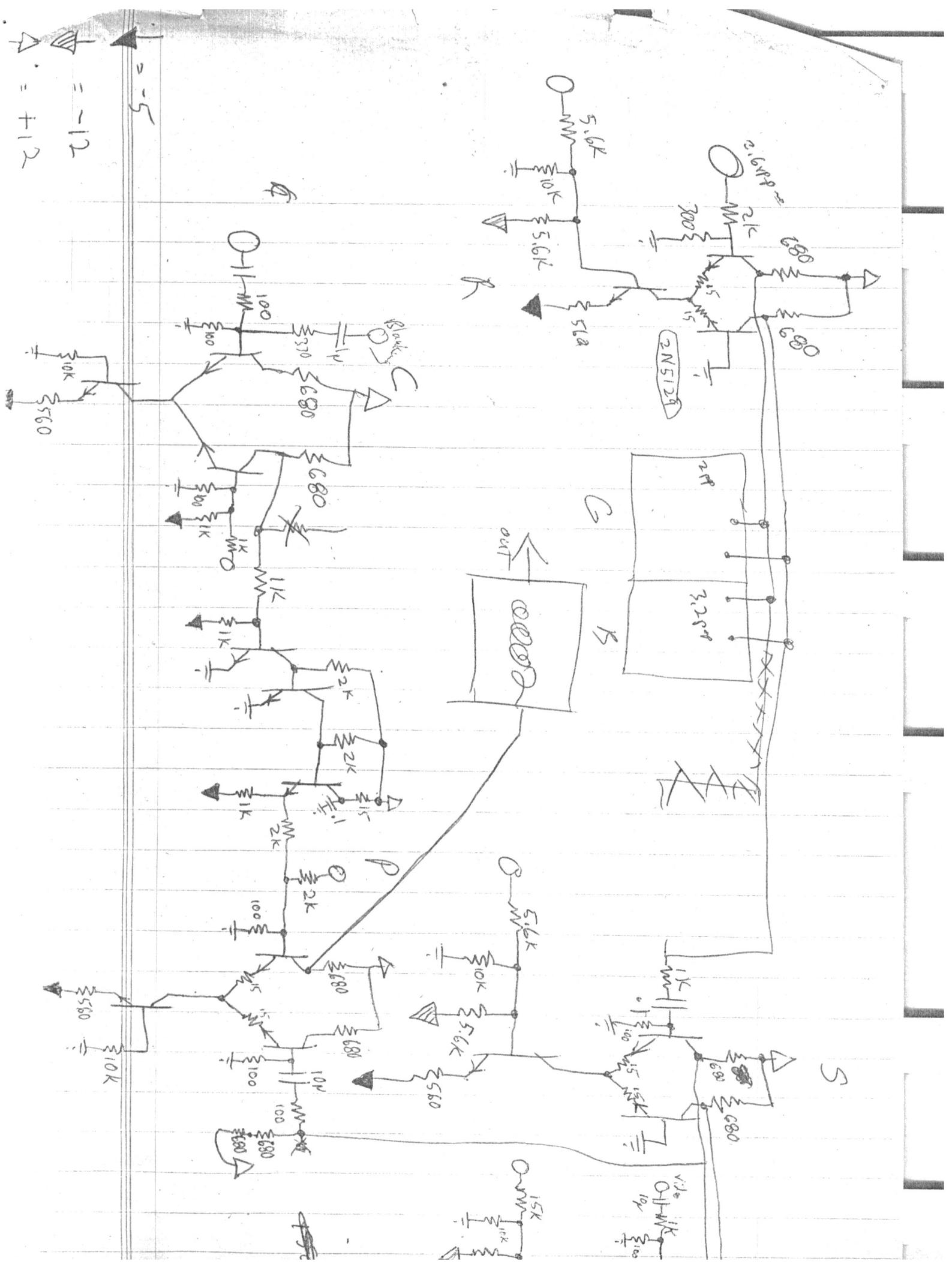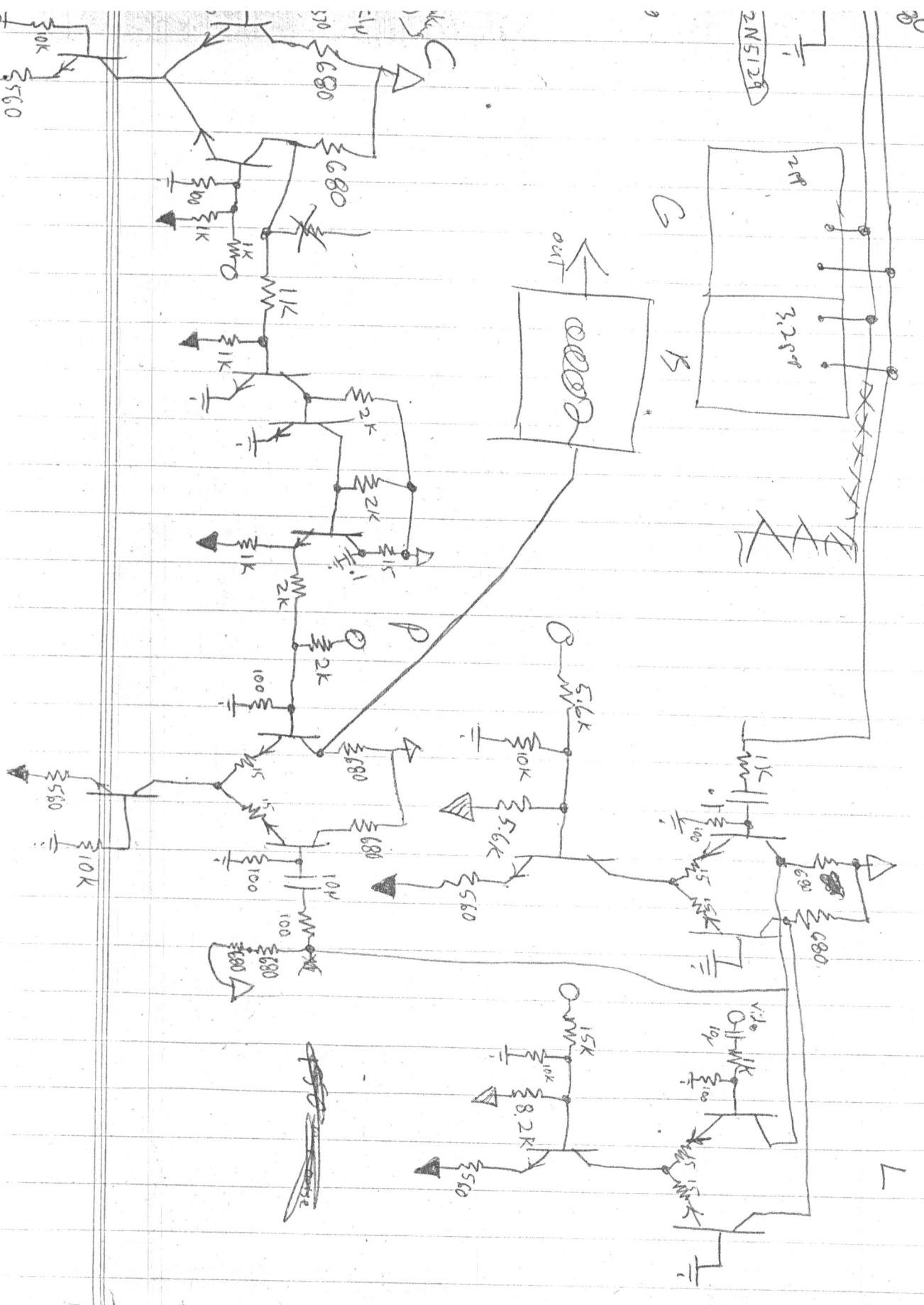
IC	
1	⏚
2	UNREG +15
3	+5
4	12
5	-5
6	3.58 in
7	3.58 To output Bd.
8	⏚
9	Red
10	Blue
11	Green
12	⏚
13	B.F. IN
14	B.F. out
15	Sync IN
16	⏚
17	Sync Out
18	B.L. in
19	B.L. out
20	
21	UNREG -15
22	⏚

IC	
1	1410
2	340-5
3	320-5
4	7404
5	rhombus Delay lines
6	lines

Pin 6   10K   IC 1   100   2K   Pin 7   IC 5 Delay line   IC 6 Delay line   100   2K

15K   15   10K   560   To pin 9

Pin 13   3K   2µf   ⅓ IC4   Pin 14   2K

Pin 15   3K   2µf   ⅓ IC4   Pin 17   2K

SAME   Pin 10

SAME   Pin 11

Pin 18   3K   2µf   ⅓ IC4   Pin 19   2K

Pin 2   IC 2   25µf

Pin 21   IC 3   25µf

1K   500p   5.6K   90°   270°   5.6K

15K   15   10K   560   .1   9

SAME   10

SAME   11
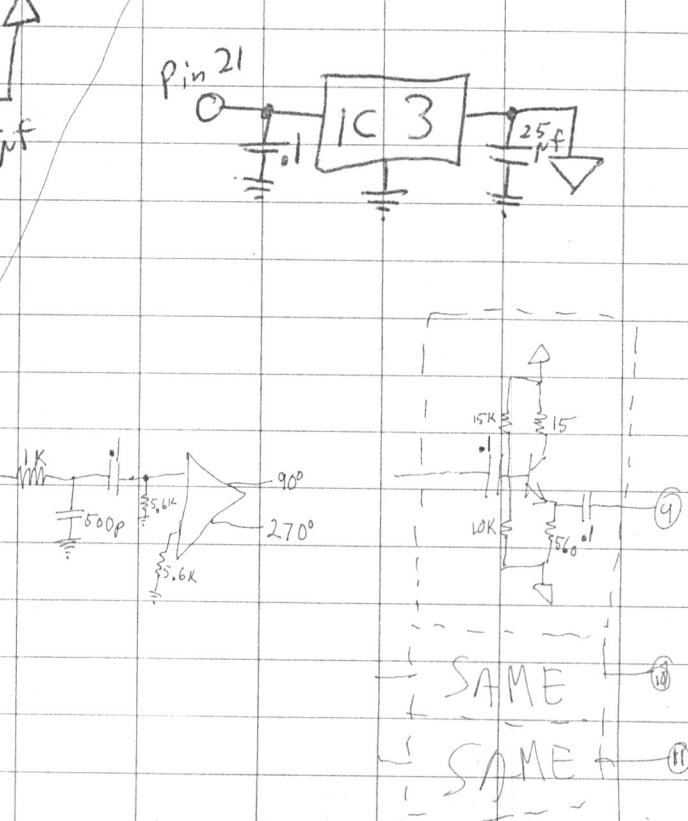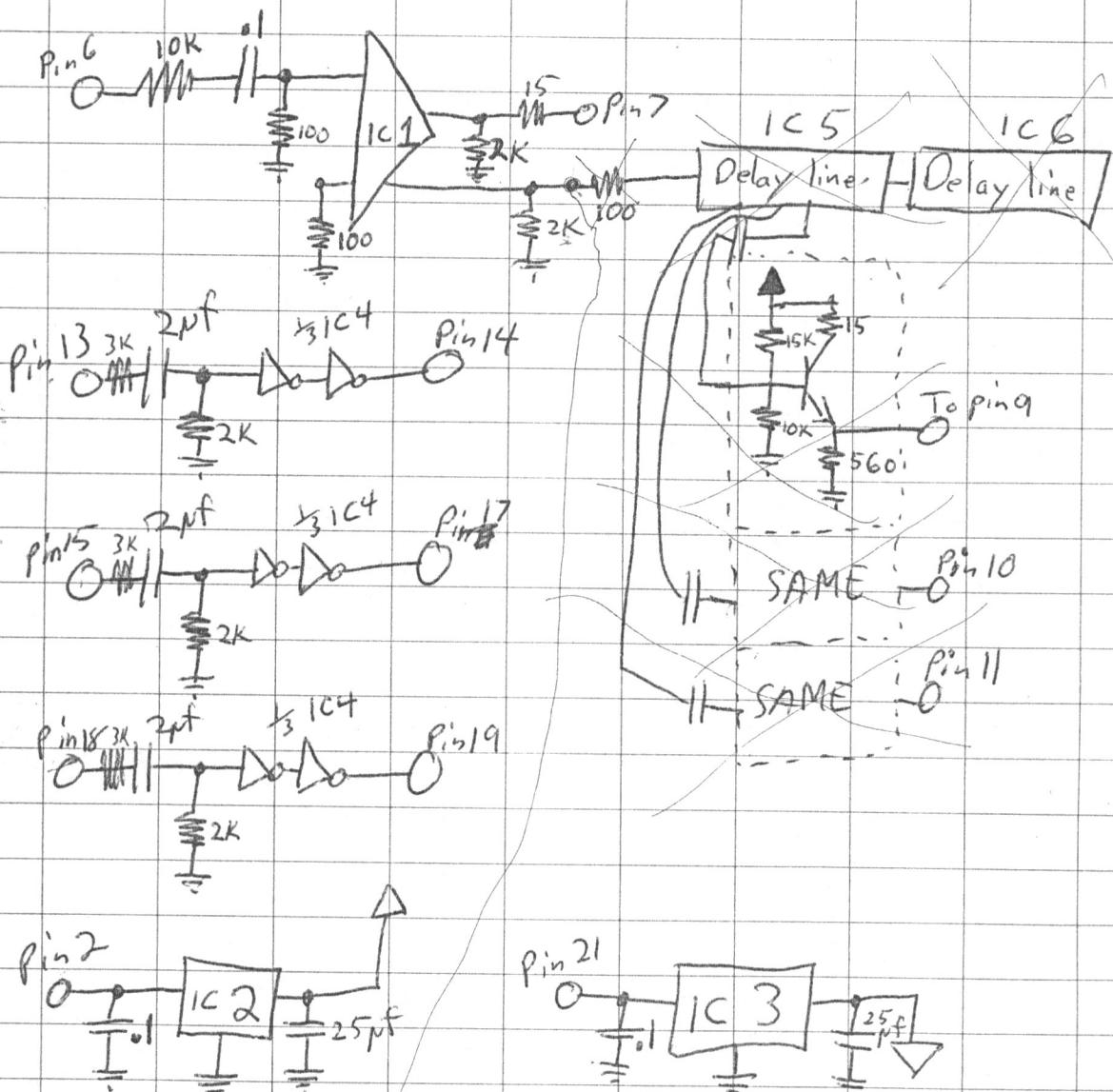
Oscillator 2   prototype II

7/10/75

+12

SAME

Pin
1
2   + 12
3   + 5
4   − 5
5   (−12)
6
7
8
9
10 Freq. A
    Control
11 Freq. B
    input
12 F.S.K.
    input
13 A.M.
    input
14 } to
    } sine
15 } Triangle
    } control
16 triangle
    out
17 12V out
18 5v out
19 Ped.
    Control
20
21
22

1K   +12

15K   10K

2K
1K

+5

10K   24

15
1K   out

100   100   1N

20K   5.6K

16 15 14 13 12 11 10 9

3.9K
1K   3.9K

30K

100K   15K   B+
20K   .035

3.9K
5µ   25µ   100   8.2K

1.5K
24

5µ
15K   3.3K
560   3.9   3.9   300   5.1K
10K   1K

M out
15
1K

+5 to −5

+11.4
−.6

↑ +5

↓ −5

▲ +12

▼ −12

⏚ ground
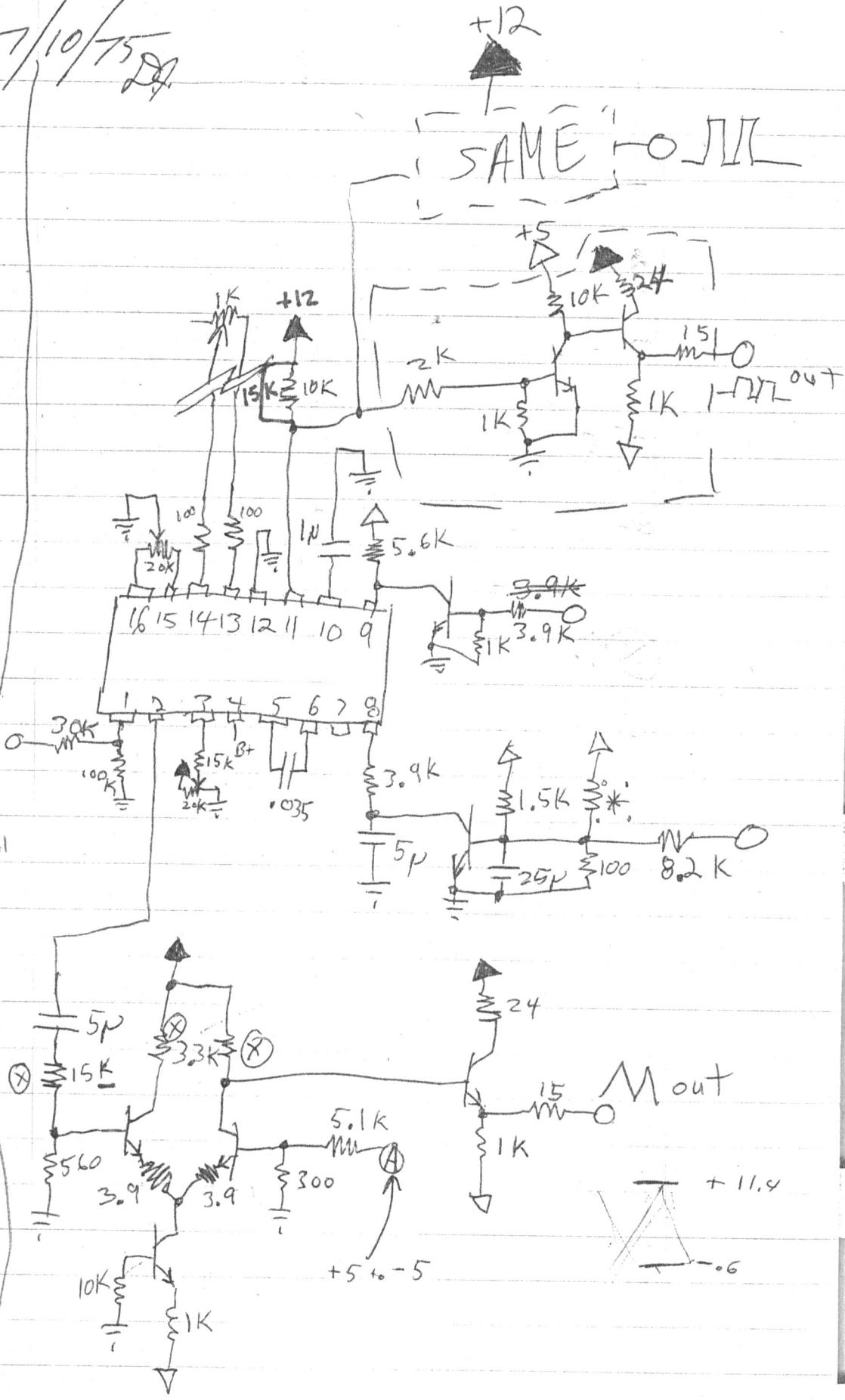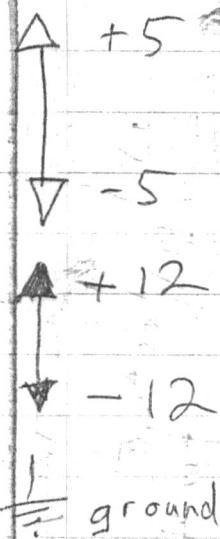
✱ must be adj. for full range

Ⓧ might need adj.

Ⓐ −5 ∿ +5   for ped. control

Oscillator 2 prototype   II

1 ⏚
2 +12
3 +5
4 -5
5 -12 optional
6
7
8
9
10 Freq. A Knob
11 Freq. B input
12 F.SK in
13 A.M.
14 +o
15 sine/triangle
    Knob
16 out
17 .12v out
18 5v out
19
20
21
22 ⏚

P1 20K
15K
20K
.04µ
D1685

IC1
2206

1P
13 14 12
100 100
1K
on panel

30K
100K

SAME

3.9K
5.6K

8.5K 3.9K 1.5K 5.6K
100 25µ 5µ

.9K
1K

15K 560
5µ

3.3K
15
5.1K 1K
3.9K
330 -5v+5

10K
1K

10K 3.9K 10K 25
1K 15 1K
1K

10K or
18K 25
2K 15 1K